

WHAT IS CLAIMED IS:

1. A data storage system comprising:
 - 5 a first volume;
 - a second volume; and
 - a computing node coupled to said first volume and said second volume, wherein
10 said computing node includes a file system for identifying files stored by said first volume and said second volume;
 - wherein said file system includes a directory structure having an entry
15 corresponding to a file maintained by said file system, and wherein said entry includes a field containing a volume identifier indicative of which of said first or said second volumes said file is stored within.
2. The system as recited in claim 1, wherein said file system is configured to allocate
20 space on said first volume and said second volume in response to receiving a request specifying a storage volume characteristic from a software application.
3. The system as recited in claim 2, wherein each of said first volume and said second volume comprises a single storage device.
- 25 4. The system as recited in claim 2, wherein each of said first volume and said second volume comprises a multiple storage device system.

5. The system as recited in claim 4, wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

6. A file system for use in a computing node coupled to a first volume and a second volume, wherein said file system is configured to identify files stored by said first volume and said second volume, wherein said file system includes a directory structure having an entry corresponding to a file maintained by said file system, and wherein said entry includes a field containing a volume identifier indicative of which of said first or said second volumes said file is stored within.

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7. The file system as recited in claim 6, wherein said file system is further configured to allocate space on said first volume and said second volume in response to receiving a request specifying a storage volume characteristic from a software application.

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8. The file system as recited in claim 7, wherein each of said first volume and said second volume comprises a single storage device.

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9. The file system as recited in claim 8, wherein each of said first volume and said second volume comprises a multiple storage device system.

10. The file system as recited in claim 9, wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

25 11. A method of operating a file system which identifies files stored by a first volume and a second volume, said method comprising:

providing a filename corresponding to a file maintained by said file system; and

accessing an entry in a directory structure, wherein said entry includes a field containing a volume identifier indicative of which of said first or said second volumes said file is stored within.

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12. The method as recited in claim 11, wherein said method further comprises allocating space on said first volume and said second volume in response to receiving a request specifying a storage volume characteristic from a software application.

10 13. The method as recited in claim 12, wherein each of said first volume and said second volume comprises a single storage device.

14. The method as recited in claim 12, wherein said first volume and said second volume are each a logical volume, wherein said each logical volume comprises a multiple
15 storage device system.

15. The method as recited in claim 14, wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

20 16. A computer readable medium comprising instructions for operating a file system which identifies files stored by a first volume and a second volume, wherein said instructions are executable by a computing node to implement a method comprising:

providing a filename corresponding to a file maintained by said file system; and

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accessing an entry in a directory structure, wherein said entry includes a field containing a volume identifier indicative of which of said first or said second volumes said file is stored within.

17. The computer readable medium as recited in claim 16, wherein said method further comprises allocating space on said first volume and said second volume in response to receiving a request specifying a storage volume characteristic from a software application.

18. The computer readable medium as recited in claim 17, wherein each of said first volume and said second volume comprises a single storage device.

19. The computer readable medium as recited in claim 17, wherein each of said first volume and said second volume comprises a multiple storage device system.

20. The computer readable medium as recited in claim 19, wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

21. A data storage system comprising:

a first volume;

a second volume; and

a computing node coupled to said first volume and said second volume, wherein said computing node includes a file system for identifying a first file stored on said first volume and a second file stored on said second volume;

wherein said file system includes a directory structure having a directory which includes a first entry corresponding to said first file and a second entry corresponding to said second file.

22. The system as recited in claim 21, wherein said file system is configured to allocate space on said first volume and said second volume in response to receiving a request specifying a storage volume characteristic from a software application.

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23. The system as recited in claim 22, wherein each of said first volume and said second volume comprises a single storage device.

24. The system as recited in claim 22, wherein each of said first volume and said
10 second volume comprises a multiple storage device system.

25. The system as recited in claim 24, wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

15 26. A method comprising:

storing a first file on a first volume based on a first set of storage characteristics
desired for said first file, wherein said first file is located in a directory of a
directory structure maintained by a file system; and

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storing a second file on a second volume based on a second set of storage
characteristics desired for said second file, wherein said first file is located
in said directory.

25 27. The method as recited in claim 26, wherein said method further comprises allocating space on said first volume and said second volume in response to receiving a request specifying a storage volume characteristic from a software application.

28. The method as recited in claim 27, wherein each of said first volume and said second volume comprises a single storage device.

29. The method as recited in claim 27, wherein said first volume and said second
5 volume are each a logical volume, wherein said each logical volume comprises a multiple storage device system.

30. The method as recited in claim 29, wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

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31. A computer memory containing a directory structure maintained by a file system having a first entry in a directory corresponding to a first file and a second entry in said directory corresponding to a second file, wherein said first file is stored on a first volume having a first set of storage characteristics and said second file is stored on a second
15 volume having a second set of storage characteristics.

32. A computer memory containing a data structure for storing a directory having an entry corresponding to a file maintained by said file system, wherein said entry includes a field containing a volume identifier which indicates a volume said file is stored within.

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33. A data storage system comprising:

one or more volumes;

25 a computing node coupled to said one or more volumes, wherein said computing node includes a file system for identifying files stored by said one or more volumes;

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	